

## Management of Vancomycin-Resistant *Enterococcus* spp. (VRE): Guidelines for Long Term Care and Rehabilitation Facilities

Developed by the Colorado Medical Directors Association and the Colorado Department of Public Health and Environment

### 1. Definitions

**Colonization:** The presence of an organism in a culture obtained from a patient who has no signs or symptoms referable to the anatomic site from which the culture was obtained. *Enterococcus* spp. is not a cause of diarrhea, so when it is isolated from a stool specimen from a patient who was cultured because of diarrhea, it should be considered colonization.

**Infection:** Symptomatic disease due to an organism. This is usually manifested by signs and symptoms of inflammation at the infected site.

**VRE:** Vancomycin resistant *Enterococcus faecium* or *Enterococcus faecalis*. There are many other enterococcal species, but *E. faecium* and *E. faecalis* represent 95% of clinical isolates. In addition, there are two species of enterococci--*E. gallinarum* and *E. casseliflavus*--which are inherently resistant to vancomycin. The mechanism of this resistance is chromosomally mediated in *E. gallinarum* (Van C phenotype) and unknown in *E. casseliflavus*. Most clinical isolates of these organisms represent colonization, not infection. These organisms (*E. gallinarum* and *E. casseliflavus*) have existed in nature for many years and are of low pathogenic potential. They will not be addressed further in these guidelines.

**Resistance:** Currently, vancomycin resistance is defined as  $\leq 16$  mm by the disk diffusion method (Kirby-Bauer) or  $\geq 8\mu\text{g/ml}$  by the agar dilution (MIC) or automated methods.

**Outbreak:** Three or more clinically significant infections acquired in the facility within a 7 day period.

### 2. Cultures for *Enterococcus* spp.

Cultures of appropriate clinical specimens should be sent when clinical history and examination indicates that infection is likely. Surveillance cultures of asymptomatic patients or screening cultures of new admissions for *Enterococcus* spp. are not routinely indicated, even if the patient has fecal incontinence.

### 3. Screening for VRE in the long term care or rehabilitation setting

All data on the efficiency of control measures for VRE come from studies of outbreaks of symptomatic infection. In the absence of an outbreak, no special screening procedures are recommended.

### 4. Susceptibility testing of *Enterococcus* spp.

All enterococcal isolates should be tested for susceptibility to penicillin, ampicillin, and vancomycin, and other drugs as clinically indicated. Results should be reported in exact units of resistance as defined above (depending on the laboratory method), rather than simply as resistant/susceptible.

### 5. Monitoring for VRE

The infection control practitioner at each long term care or rehabilitation facility should ensure that vancomycin susceptibility testing is performed on all isolates of *Enterococcus* spp. and should monitor for vancomycin resistance in cultures sent for clinical indications, i.e. suspicion of infection. If a significant increase in prevalence or clustering of cases occurs, further investigation should be initiated after consultation with the local or state health department and the Medical Director of the facility.

### 6. Management of patients known to be colonized or infected with VRE

A. Stool colonization in a patient with diarrhea or fecal incontinence. Such patients, when made known to the facility, should be placed in a private room or cohorted with other patients colonized with the same organism. Caregivers should employ appropriate barrier precautions and handwashing when caring for such patients. This includes *gloves and gowns* for any significant patient contact. (Insignificant contact would occur if a staff member briefly entered the room to leave a tray of food and had no other interaction with the patient.) Handwashing must be performed after gloves are removed. Since objects may be involved in transmission of VRE, common use equipment such as blood pressure cuffs, thermometers, and stethoscopes should not be shared with non-cohorted patients.

Such a colonized patient may be moved to a non-private room and/or cohorting may be discontinued (a) if the diarrhea or fecal incontinence ceases or (b) if there are two consecutive negative rectal cultures taken at least 24 hours apart (a finding that indicates colonization has ceased).

B. Stool colonization in a patient who does not have diarrhea or fecal incontinence. Standard precautions and handwashing should be applied for all residents of the facility, but neither a private room nor cohorting is indicated for a VRE-colonized patient without diarrhea or fecal incontinence. Such patients should not be restricted from participation in social or therapeutic group activities within the facility unless there is reason to think they have been involved in transmission to other residents.

C. Colonization of other sites besides the stool. Standard barrier precautions appropriate to the site of colonization and handwashing should be used: for a colonized wound, use wound precautions; for a colonized tracheostomy site, use

precautions when handling respiratory secretions; when the urine is colonized or infected, use standard precautions appropriate for urine whether the resident is continent or incontinent of urine.

D. Colonization of the stool and clinical infection in another site. Some patients may have clinically significant VRE infections, e.g. bacteremia or wound infection, and also be found to have carriage of VRE in the stool. These patients should have medical treatment as in paragraph E (below) and after receiving treatment, should be managed following the appropriate paragraphs above.

E. Treatment of VRE infection. Patients with VRE infection (as opposed to colonization) generally require a level of care which can only be provided by an acute care hospital.

#### **7. Transfer of residents from long term care or rehabilitation facilities to acute care facilities and vice versa.**

Colonization with VRE should not prevent the transfer of an individual between facilities if the transfer is medically indicated. Providers should inform the parties receiving the resident/patient of the person's colonization, the person's level of hygiene and fecal continence, and whether transmission to other persons has occurred. Patients should not be held in a facility waiting for colonization to clear if the VRE colonization is the only reason to hold the patient.

Physicians and hospitals in a community in which VRE is not known to have been previously reported should consult with the local or state health department regarding surveillance data on VRE in the community and the conditions of placement of VRE-colonized individuals in long term care or rehabilitation facilities. The health department may modify this protocol depending on the situation in the community.

#### **8. "Decolonization" of patients.**

There is no known effective therapy to decolonize patients with VRE. In some instances, bathing with chlorhexidine (Hibiclens) may be helpful in reducing the number of organisms on the skin, but it cannot be relied on to decolonize a patient.

#### **9. Housekeeping for a patient colonized or infected with VRE and after the patient has been transferred or discharged.**

Disinfection of the room should be performed using standard bacteriocidal disinfectants. The disinfection should include environmental surfaces, such as bedside tables, bed rails, and objects that may be reused (e.g. blood pressure cuffs, stethoscope, etc.).

#### **10. Use of rectal thermometers**

The use of rectal thermometers is discouraged in all patients whether or not the person is colonized with VRE. Oral or tympanic thermometers are recommended for routine use unless there are special circumstances.

#### **11. Vancomycin susceptible *Enterococcus* spp.**

Patients with vancomycin susceptible enterococcal colonization or infections do not represent a public health problem. These persons should be managed by the facility with appropriate medical treatment, standard barrier precautions for body substances, and close attention to hygiene.

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